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NEW HAMPSHIRE COLLEGE

Agricultural Experiment Station

THE

Inspection of Feeding-Stuffs

IN 1904

IN COÖPERATION WITH THE STATE BOARD OF AGRICULTURE

NEW HAMPSHIRE COLLEGE
OF
AGRICULTURE AND THE MECHANIC ARTS
DURHAM

COMPOSITION OF COMMON CATTLE FOODS.

	Water.	Ash.	Protein.	Soluble Carbohydrates.	Fibre.	Fat.
* Hay, red top	8.9	5.2	7.9	47.4	28.6	1.9
* Hay, Timothy	13.2	4.4	5.9	45.0	29.0	2.5
* Hay, clover	15.3	6.2	12.3	38.1	24.8	3.3
* Hay, Hungarian	7.7	6.0	7.5	49.0	27.7	2.1
* Oat fodder	8.9	6.2	7.6	45.1	29.3	2.8
* Rye fodder, in bloom	8.5	5 9	9.7	43.4	30.2	2.3
* Corn stover	40.1	3.4	3.8	31.9	19.7	1.1
† Corn silage	80.5	1.5	1.6	10.0	5.8	.6
* Corn, N. H. Flint	10.1	1.5	11.6	70.2	1.1	5.5
* Corn meal	15.0	1.4	9.2	68.7	1.9	3.8
* Oats, whole	11.0	3.0	11.8	59.7	9.5	5.0
§ Wheat bran, spring	10.6	6.0	16.3	53.0	9.4	4.7
§ Wheat bran, winter	11.7	5.9	15.2	54.8	8.5	3.9
¶ Wheat middlings	10.3	3.3	19.0	57.7	4.6	5.1
¶ Gluten feed	8.6	1.2	26.3	53.4	6.9	3.6
¶ Gluten meal	8.8	.7	35.5	50.3	1.6	3.1
‡ Distillers' Grains	8.8	1.8	32.1	34.9	11.0	11.4
‡ Brewers' Grains	8.0	3.8	23.1	49.4	10.8	4.9
‡ Malt sprouts	11.0	5.8	27.1	42.6	11.9	1.6
¶ Linseed meal, new process	10.1	5.8	33.2	38.4	9.5	3.0
¶ Cottonseed meal	6.9	7.2	45.6	25.1	5.6	9.6

* Composition of American Feeding Stuffs. Jenkins and Winton.
† Analyses made at the N. H. Expt. Sta., 1895-1899.
§ Penn. Expt. Sta. Bull. 48.
¶ Compiled from Feed Inspection Reports and Comp. Am. Feeding Stuffs.
‡ Hatch Expt. Sta. Bull., No. 94.

THE INSPECTION OF FEEDING-STUFFS IN 1904

Fifty samples of commercial feeding-stuffs, which came within the scope of the statute, were collected by the State Board of Agriculture and analyzed at the Agricultural Experiment Station. Of these samples, five showed marked deficits in one or both of the constituents guaranteed.

Two samples of cotton-seed meal were low in protein; but one of them was exceptionally high in fat, which in a measure offset the deficit. A sample of linseed meal showed a similar deficit in protein, partially made good by an excess of fat. A sample of hominy feed was unreasonably low in both protein and fat, and a sample of beef scraps was low in protein only. One sample of gluten feed unaccompanied by a guarantee was much lower than the average in protein; but was retailed at as high a price as the others.

The prices of the different kinds of feeds should be carefully considered by the purchaser. They are apparently based on the demand for certain classes of goods and are made as high as the market will bear. They frequently are out of proportion to the intrinsic value of the material and vary widely in different localities for the same kind of feed. Gluten feeds, with practically the same feeding values, varied from $27 to $33 per ton. Cotton-seed meal, on the other hand, varied between $29 and $31 per ton, which is not unreasonable.

In comparing prices of different classes of feeding-stuffs, equally striking facts are observed.

Cotton-seed and linseed meal were both sold for an average price of $30 per ton, while the average of gluten feeds

was $29 per ton. At these prices, cotton-seed meal is more economical to buy for winter feeding, when the ration must consist largely of hay and silage. Equivalent grain mixtures, with cotton-seed meal and bran on the one hand, and gluten feed and bran on the other, will cost from five to ten per cent. less with the cotton-seed than with the gluten.

A comparatively new line of cattle-foods on our markets is the distillers' dried grains. They have a feeding value fully equal to the gluten feeds and have been relatively cheaper, the average price per ton having been about $28.

A class of feeding-stuffs, persistently overvalued by the consumer with resultant profits to the dealers and manufacturers, are the mixtures prepared from corn and oat refuse. The class known as corn and oat feeds ranged in price from $23 to $27 per ton, or about the same as wheat bran. They have as a rule about half the amount of protein that bran should contain and several per cent. more fiber; and, on the basis of digestible matter, they should be valued at not more than four fifths the value of bran. Oat-feeds are still poorer and, while selling at $18 to $20 per ton, have a composition no better than well-cured oat-fodder.

On the other hand, hominy feeds are practically as valuable as corn meal, since much of our corn meal is prepared from inferior grain, while the hominy feed is the refuse from selected grain and from the richer parts of the kernel, when considered as a cattle-food.

As a whole, the inspection shows a careful compliance with the law on the part of manufacturers, in making their goods equal to their statements of composition. The law cannot regulate prices, but the purchaser can, by declining to purchase goods which are valued too highly in proportion to their stated composition.

COMPOSITION OF COMMERCIAL FEEDING STUFFS, 1904.

Brand.	Manufactured by	Sampled at	Protein.		Fat.	
			Guar.	Found.	Guar.	Found.
	COTTON-SEED MEAL.					
Owl	F. W. Brodie & Co	Concord	43.	46 83	9.	7.54
Green Diamond	Chapin & Co	Newport	43.	36.87	9.	12.44
Magnolia	Chas. M. Cox Co	Sandwich	43.	45.34	9.	9.90
Dixie	Humphreys, Goodwin & Co	Sandwich	43.	45.44	9.	9.58
Star	Sledge & Wells Co	Bristol	43.	40.95	9.	9.27
Soper's	J. E. Soper & Co	Contoocook	43.	44.72	9.	9.59
	LINSEED MEAL.					
Cleveland	American Linseed Co	Contoocook	38.	33.82	1.	2.11
Old Process	American Linseed Co	Franklin Falls	32.	36.12	5.	7.63
	GLUTEN MEAL.					
Cream	Chas. Pope Glucose Co	Newport		36.21		2.30
Cream	Chas. Pope Glucose Co	Derry	35.5	44.88	3.	1.04
	GLUTEN FEED.					
Buffalo	Glucose Sugar Refining Co.	Contoocook		26.23		3.11
Globe	New York Glucose Co	Franklin Falls	27.	26.78	3.38	2.27
Pekin		Manchester		24.08		3.21
Queen		North Weare.		25.96		2.28
Warner's		Sandwich.		18.88		2.30
	DAIRY FEED.					
Quaker	American Cereal Co	Bristol		14.48		2.87
H.-O	H.-O. Company	Manchester	18.	17.60	4.5	4.21
	HOMINY MEAL.					
Green Diamond	Chapin & Co	Derry	11.	8.41	8.	4.84
	HOMINY FEED.					
Wirthmore	Chas. M. Cox Co	Nashua Jct	10.5	10.62	7.5	6.81
Hominy Feed	Miner, Hillard Milling Co	Derry	10.	10.	7.5	6.35
	WHEAT FEED.					
Buckeye		Laconia		21.23		4.68
	OAT FEED.					
Vim	American Cereal Co	Manchester		6.23		2.36
Royal	Great Western Cereal Co	Franklin Falls		7.28		1.62
David's		Manchester		7.90		2.02
	CORN AND OAT FEED.					
Victor	American Cereal Co	Laconia	9.	14.37	4.	3.21
Boss	Great Western Cereal Co.	Newport		8.95		2.93
Durham	Great Western Cereal Co	Nashua Jct		8.75		4.68
Excelsior		Nashua Jct	8.0	10.36	4.2	6.66
De-fi	Ellsworth & Co	Concord	8.3	8.73	3.0	1.62
Haskell's	W. H. Haskell Co	W.Manchest'r		8.57		5.25
H.-O. Horse	H.-O. Company	Laconia	12.	11.71	4.5	4.5

COMPOSITION OF COMMERCIAL FEEDING STUFFS, 1904.—*Concluded.*

Brand.	Manufactured by	Sampled at	Protein.		Fat.	
			Guar.	Found.	Guar.	Found.
		DISTILLER'S GRAIN.				
Ajax Flakes		Manchester.	.....	27.59	.....	8.82
Biles Ready Ration		Derry	.....	23.62	.....	6.93
Blue Ribbon		Concord	.....	33.31	.....	14.19
Empire State		Newport	.....	32.60	.....	13.06
		POULTRY FOOD.				
American	American Cereal Co	Concord	.....	13.45	.....	6.31
Armour's	Armour Fertilizer Works	Woodsville	.....	22.59	.....	0.40
H.-O	H.-O. Company	Concord	17.	15.77	5.5	4.86
Page's	C. S. Page	Groveton	.....	25.89	.....	3.85
Pratt's	Pratt Food Co		.....	14.68	.....	8.05
		MEAT AND BONE MEALS.				
Bradley's Superior	American Agri. Chemical Co	Meredith	30.	37.17	8.	9.84
Beef Scraps	American Agri. Chemical Co	Manchester	40.	46.96	15.	14.23
Meat and Bone	Beach Soap Co	Laconia	26.	26.45	10.	8.65
Beef Scraps	Bowker Fertilizer Co	Concord	50.	42.31	15.	14.24
Animal Meal	The Bowker Co	Concord	30.	34.37	5.	8.33
Swift's Beef Scraps	Lowell Fertilizer Co	Manchester	.....	41.33	.....	18.20
Swift's Meat and Bone	Lowell Fertilizer Co	Nashua	.....	52.65	.....	9.76
Whitman & Pratt's		Manchester	.....	39.62	.....	15.24
		MISCELLANEOUS.				
Blatchford's Calf Meal		Bristol	.....	23.31	.....	4.11
Blatchford's Sugar & Flaxs'd		Nashua Jct	28.25	26.73	11.25	10.71

FRED W. MORSE, *Chemist.*

ABSTRACT OF FEEDING-STUFF STATUTE.

The state Legislature of 1901 passed an act to regulate the sale of concentrated commercial feeding-stuffs.

The points of the law of most interest to the consumer are concisely stated below.

Kinds of Feed coming within the Law. The law applies to all feeding-stuffs, except hays and straws; whole seeds and meals of wheat, rye, barley, oats, Indian corn, buckwheat and broom corn; brans and middlings. The principal feeds coming under the provisions of the law are linseed meals, cotton-seed meals, pea meals, cocoanut meals, gluten meals, gluten feeds, maize feeds, starch feeds, sugar feeds, dried brewers' grains, malt sprouts, hominy feeds, cerealine feeds, rice meals, oat feeds, corn and oat chops, ground beef or fish scraps, mixed feeds and all other materials of similar nature.

The Brand. Each package of feeding-stuff included within the law shall have affixed, conspicuously printed, the following statements:

The number of net pounds contained in the package.

The name or trademark under which it is sold.

The name of the manufacturer or shipper.

The place of manufacture.

The place of business of manufacturer or shipper.

The percentage of crude protein.

The percentage of crude fat.

These statements may be printed directly on the bag or on a tag attached to the package.

Analysis. The secretary of the Board of Agriculture is required to collect and analyze each year at least one sample of each of the brands of feeding-stuffs coming within the provisions of the act, and publish the results, together with related matter, from time to time.

DIGESTIBLE NUTRIENTS IN COMMON CATTLE FOODS.—POUNDS IN 100.

	Protein.	Carbohydrates.	Fat.
* Hay, Red Top	4.8	46.9	1.0
* Hay, Timothy	2.8	43.4	1.4
* Hay, Clover	6.8	35.8	1.7
* Hay, Hungarian	4.5	51.7	1.3
* Oat Fodder	4.3	46.4	1.5
* Corn Stover	1.7	32.4	0.7
* Corn Silage	0.9	11.3	0.7
* Corn Meal	7.9	66.7	4.3
* Oats	9.2	47.3	4.2
* Wheat Bran	12.2	39.2	2.7
* Wheat Middlings	12.8	53.0	3.4
† Gluten Feed	22.5	52.0	3.0
† Gluten Meal	31.3	46.0	2.6
¶ Brewer's Dried Grains	18.9	34.2	4.3
¶ Malt Sprouts	20.6	47.8	0.9
¶ Distillers' Dried Grains	23.4	38.6	10.8
† Linseed Meal, new process	29.3	36.3	2.9
† Cottonseed Meal	31.0	16.9	8.3

* From Henry's Feeds and Feeding.
† Calculated from latest inspection reports.
¶ Calculated from Bull. 94, Hatch Expt. Sta.

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